

REMARKS

Claims 1-2, 7-8, 17-22 and 25-31 are present in the application. In view of the remarks which follow, reconsideration of the application is respectfully requested.

Restriction Requirement

A restriction requirement was imposed by a prior Office Action, and Applicants traversed the restriction requirement in a prior Response. On page 5 of the presently-pending Office Action, the Examiner indicated that the previously-imposed restriction requirement had been made final.

The undersigned telephoned the Examiner on June 15, 2001, in order to discuss the restriction requirement. The undersigned pointed out that independent Claim 1 is an apparatus claim in claim Group I, and that independent Claim 25 is apparatus claim in claim Group II. The reason given in the prior Office Action for the restriction requirement is that Claim 1 is a "product claim", but that Claim 25 is a "process of use" claim. However, Claim 25 is really a product claim rather than a process of use claim, and the restriction requirement thus gave no valid reason for drawing a distinction between Claims 1 and 25. Therefore, to the extent that Claim 25 is being examined on the merits, Claim 1 should also be entitled to examination on the merits. This telephone conference did not result in agreement on the restriction requirement.

The undersigned therefore telephoned Supervisory Examiner Ira Lazarus on June 15, 2001, and presented the same objection to the restriction requirement. Examiner Lazarus then reviewed the file, and called back to indicate that a

decision had been made to issue a new Office Action which also addressed the merits of the non-elected claims in claim Group I. Thus, Applicants expect to receive in due course a non-final action that addresses the merits of non-elected Claims 1-2, 7-8 and 17-22. The only claim which will remain withdrawn from examination is dependent Claim 29, which has been withdrawn from examination for reasons other than the particular restriction requirement in question. Examiner Lazarus indicated that he would issue an interview summary form to document the telephone conferences. The undersigned indicated that, as a courtesy, and in order to expedite examination of the present application, this Response would be filed prior to issuance of the non-final Office Action, in order to address other issues which are raised by the currently-pending Office Action, and which were not addressed in the telephone discussions.

Status of the Non-Elected Species of Figure 1

The present application is a continuation of U.S. Serial 08/406,226 filed March 17, 1995. In the parent application, an election of species requirement was imposed between the species of Figure 1 and the species of Figure 2, pursuant to which Applicants elected the species of Figure 1 for examination in the parent application. No appeal was filed during examination of the parent application. Applicants then filed the present divisional application, in order to pursue examination of claims directed to the species of Figure 2. (It should be noted that Applicants have not lost or waived the right to file a further divisional application which again presents claims directed to the species of Figure 1).

In the present application, examination has been directed to claims which read onto the species of Figure 2.

An appeal was previously filed in the present application, resulting in a Board Decision which reversed the pending grounds of rejection, and which directed the Examiner to consider certain other issues enumerated by the Board in its Decision. Examination on the merits has continued after the appeal, still focusing on claims that read onto the species of Figure 2.

In the presently pending Office Action, there is a statement (last line on page 5 to line 2 on page 6) that Claims 26 and 31 "do not read on the embodiment of Figure 1 since this non-elected species is abandoned per the Board of Appeals Decision". This statement in the Office Action is respectfully traversed. The Board's Decision occurred in the present divisional application, and dealt only with claims that read onto Figure 2. The Decision never really addressed Figure 1 at all, and certainly did not indicate that the species of Figure 1 was abandoned. In fact, as discussed above, Applicants still have the right to obtain examination of claims that read onto Figure 1, by filing a further divisional application.

Further, the present application includes several generic claims that read onto the elected species of Figure 2, and also onto the non-elected species of Figure 1. This includes Claims 25, 26 and 31, all of which read onto both Figure 1 and Figure 2. In the event that Applicants ultimately obtain allowance of one or more of these generic claims, Applicants will obtain protection for both the species of Figure 1 and also the species of Figure 2. Moreover, and as recognized in 37 CFR § 1.146 and also in MPEP 809.02(c), if Applicants ultimately obtain allowance of generic Claim 25, then dependent Claim 29 (which depends from Claim 25 and is currently withdrawn from examination because it reads onto Figure 1 but not Figure 2) will automatically revert to active

status, and will have to be considered on the merits. Consequently, for the various different reasons discussed above, the Examiner is incorrect in stating that the examined claims do not read onto the species of Figure 1, and is also incorrect in stating that the species of Figure 1 has been abandoned.

A separate but similar problem appears at lines 6-7 on page 2 of the present Office Action, where the Examiner states that Claim 29 reads onto Figure 1, and that Figure 1 has been abandoned by Applicant. Applicants agree that Claim 29 reads onto Figure 1 but not Figure 2. However, for reasons discussed above, Applicants respectfully traverse the Examiner's assertion that Figure 1 has been abandoned. Moreover, and as also discussed above, Claim 29 depends from generic Claim 25 and, if Applicants ultimately obtain allowance of generic Claim 25, Claim 29 will automatically be reinstated to active status and will have to be examined on the merits, in accord with 37 CFR § 1.146 and MPEP 809.02(c).

Support for Claims 26 and 31

On page 3, the Office Action rejects Claims 26 and 31 under the first paragraph of 35 U.S.C. §112, on the ground that they each recite subject matter which was not disclosed in the originally-filed application. This ground of rejection was raised in a prior Office Action, and prompted Applicants to previously amend the specification by adding a paragraph on page 7. The currently-pending Office Action raises an objection to this added paragraph under 37 CFR §1.71. These grounds of rejection and objection are respectfully traversed.

In this regard, lines 2-6 on page 6 of the Office Action explain the basis for this objection and rejection. More specifically, this portion of the Office Action first concedes that, in discussing the non-elected species of

Figure 1, the originally-filed specification teaches on page 7 that the phase change material (PCM) can fully fill the remainder of the cavity (i.e. the portion of the cavity not taken up by the porous material). This portion of the Office Action then goes on to assert that the originally-filed specification does not include any similar teaching for the elected species of Figure 2. Applicants respectfully disagree, for the following reasons.

In discussing the elected species of Figure 2, the originally-filed specification states at lines 25-26 on page 7 that: "The PCM material 15 is then entered into the cavity as in the first embodiment". As noted above, the Examiner has conceded that the originally-filed specification teaches with respect to the species of Figure 1 that the PCM material can be entered into the cavity so as to "fully fill the remainder of the cavity" in a manner yielding "a PCM filled heat sink" (lines 7-12 on page 7). To the extent that the specification then teaches at lines 25-26 on page 7 that the PCM material is entered into the cavity of the species of Figure 2 in the same manner that it is entered into the cavity of the species of Figure 1, this means that the PCM in Figure 2 can also "fully fill the remainder of the cavity" in a manner yielding "a PCM filled heat sink", just as it did in Figure 1.

The Office Action then asserts that a PCM which partially fills a cavity might be capable of movement within the cavity, in either its solid phase or its liquid phase. However, this is not the issue. The issue is whether the PCM would be capable of significant movement where it fully fills the cavity. The Examiner's focus on a PCM which partially fills a cavity is based on the Examiner's assertion that the present application does not teach that the cavity in the species of Figure 2 could be fully filled with PCM. However, as discussed above, the originally-filed specification does

teach that the PCM can "fully fill" the cavity in the first embodiment of Figure 1 (lines 1-7 on page 4, and lines 7-12 on page 7), and that the PCM can fully fill the cavity in the second embodiment of Figure 2 (lines 25-26 on page 7). The Office Action does not take the position that a PCM which fully fills the cavity would be capable of any significant movement, and Applicants respectfully submit that it would not be capable of significant movement. Consequently, and in view of the foregoing discussion, it is respectfully submitted that the paragraph added on page 7 does not introduce new matter into the disclosure of the present invention. Similarly, it is respectfully submitted that the subject matter of Claims 26 and 31 is supported by the originally-filed disclosure of the species in Figure 1, and is also separately supported by the originally-filed disclosure of the species in Figure 2, and therefore involves no new matter. For these reasons, the Examiner is respectfully requested to withdraw the rejection of Claims 26 and 31 under the first paragraph of §112, and to withdraw the objection to the specification under 37 CFR §1.71.

Rejection Under 35 U.S.C. §102

Claims 25-27 and 30-31 stand rejected under 35 U.S.C. §102 as anticipated by Telkes U.S. Patent No. 2,677,367. This ground of rejection is respectfully traversed, for the following reasons. With respect to when a claim is anticipated under §102, the Court of Appeals for the Federal Circuit has consistently held that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed.Cir. 1987). Similarly, "The identical invention must be

shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed.Cir. 1989). MPEP §2131 cites these two cases for precisely the same principle that they are cited here, and in fact quotes the same language from these cases that is quoted here.

In the present application, independent Claim 25 includes a recitation of "a highly thermally conductive porous material disposed within said cavity and coupled physically and thermally to said highly thermally conductive portion of said enclosure". Similarly, independent Claim 30 recites "a high thermally conductive porous material ... which is disposed within a cavity in said enclosure and which is coupled physically and thermally to said highly thermally conductive portion of said enclosure". It is respectfully submitted that these portions of Claims 25 and 30 recite distinctive features that the Telkes patent fails to teach or suggest.

More specifically, in setting forth the §102 rejection, the Office Action relies on Figure 4 of Telkes. Telkes discloses in Figure 4 a heat storage unit 12 which stores heat by using a chemical such as disodium orthophosphate to absorb heat as it changes from a solid to a liquid. Telkes uses this chemical due to its high latent heat of fusion. However, when this chemical freezes, it can crystallize into either of at least two different hydrates, for example as discussed at line 45 in column 1 of Telkes. For proper operation, it is desirable that the liquid chemical crystallize or freeze as one specific type of hydrate, and do so predictably. Accordingly, Telkes uses a "crystal promoter" so that the desired hydrate will crystallize, and the undesired hydrates will not. The crystal promoter may be either cellular glass or glass wool, as respectively discussed

at line 32 of column 3 and line 23 of column 4. The crystal promoter is suspended in the housing cavity, but is apparently not attached to the walls of the cavity, for example as noted at lines 43-46 of column 4. Telkes does not appear to teach or suggest that the cellular glass or the glass wool discussed therein is highly thermally conductive. Further, Telkes does not appear to include anything which teaches or suggests that thermal conductivity would be desirable or provide any useful benefit. Telkes emphasizes that the intended function of these components is to promote certain crystal growth, and does not discuss whether or not they may be thermally conductive.

On page 6 of the Office Action, the Examiner observes that the container 10 of Telkes may be made of a heat-conductive material, such as a metal or a glass. The Examiner then asserts that, if the container 10 is made of a heat-conductive glass, the calcium-containing glass wool matrix 14' must also necessarily be heat-conductive. However, there is no teaching in Telkes that the glass wool matrix 14' is made from the same glass material as the container 10, and thus there is no basis for the Examiner's assertion that the glass wool matrix 14' is necessarily heat-conductive.

The Examiner goes on to note the teaching at lines 43-46 in column 4 of Telkes that the glass wool matrix 14' substantially fills the interior of the container, in a manner "so that it will not settle to the bottom". The Examiner then asserts that this means "the matrix 14' is coupled physically to the wall" of the container. But there is no teaching in Telkes that the glass wool matrix 14' is physically coupled to the wall of the container 10. In fact, the clear import of the teachings in Telkes is that the glass wool matrix 14' is not physically coupled to the container 10.



As discussed above, anticipation under §102 requires that a reference like Telkes disclose "each and every" element recited in the claim, or in other words effectively the "identical invention" that is recited in the claim. Telkes fails to meet this requirement as to Claims 25 and 30. In particular, Claims 25 and 30 each recite "a highly thermally conductive porous material", whereas Telkes has no teaching that the particular substance used for a porous material in Telkes is highly thermally conductive. Moreover, Claims 25 and 30 each recite that the porous material is "coupled physically" to an enclosure in which it is disposed, whereas Telkes appears to disclose that the porous material of Telkes is not coupled physically to its enclosure. Applicants therefore respectfully submit that Telkes does not anticipate the subject matter of Claims 25 and 30 under §102, because Telkes fails to meet the requirement of disclosing each and every element which is recited in these claims. Claims 25 and 30 are therefore believed to be allowable, and notice to that effect is respectfully requested.

Rejection Under 35 U.S.C. §103

Claim 28 stands rejected under 35 U.S.C. §103 as obvious in view of a combination of teachings from the Telkes patent and Knoell U.S. Patent No. 5,039,577. Claim 28 is a dependent claim, which depends from independent Claim 25 and which thus includes the distinctive limitations from Claim 25 that have been quoted and discussed above. For reasons discussed above in association with Claim 25, it is respectfully submitted that these features are not disclosed in the Telkes patent. Also, for the following reasons, it is respectfully submitted that these features would not be rendered obvious by the Knoell patent.

In this regard, the Knoell patent discloses in Figure 2 an enclosure 10 for an electronic circuit. However, Knoell does not disclose any type of heat exchanger or storage unit. Knoell is thus believed to have little relevance to subject matter of the type to which the present invention relates. It is therefore respectfully submitted that a person of ordinary skill in the art would have no motivation to attempt to combine teachings from the Knoell patent with teachings from the Telkes patent.

Moreover, even though Knoell discloses an enclosure, Knoell does not appear to teach or suggest the provision within that enclosure of any type of structure, much less a "highly thermally conductive porous material disposed within said cavity and coupled physically and thermally to said highly thermally conductive portion of said enclosure", as recited in Claim 25 and thus also in dependent Claim 28. Consequently, even if the teachings of Telkes and Knoell were combined, the teachings of Knoell would not cure the deficiencies in the teachings of Telkes with respect to the distinctive features recited in Claim 25, which are also recited in Claim 28 by virtue of the fact that Claim 28 depends from Claim 25.

In addition, there are other reasons why Claim 28 is believed to be patentably distinct from the combined teachings of Telkes and Knoell. For example, Claim 28 recites an enclosure which includes a composite of highly thermally conductive fibers, and in addition recites that the fibers "have portions extending from said matrix into said cavity". In explaining the rejection of Claim 28, the Office Action effectively concedes that Telkes does not disclose this feature, and therefore asserts that the Knoell patent discloses a composite of highly thermally conductive fibers. However, the Office Action does not assert that the fibers of

the Knoell composite could have portions extending from the matrix into the cavity. In fact, even though Applicants pointed out in a prior Response that Knoell fails to disclose fibers that have "portions extending from said matrix into said cavity", there is no place in the pending Office Action where the Examiner responds to this argument by actually identifying a specific location in Knoell at which the Examiner believes that this particular feature is supposedly taught. For these reasons, it is respectfully submitted that Telkes and Knowles both fail to teach or suggest this particular feature. In contrast, and as noted above, this feature is expressly recited in Claim 28 of the present application.

In the Office Action, in the paragraph which bridges pages 6-7, the Examiner asserts that it is not proper for Applicants to attack references individually where a rejection is based on a combination of references. But the Examiner relied specifically on the Knoell patent by itself in order to try to meet the limitation in Claim 28 directed to a matrix of fibers, where the fibers "have portions from said matrix extending into said cavity". Since the Examiner relied on Knoell by itself for a teaching of this feature, Applicants addressed Knoell by itself in pointing out that Knoell does not really disclose what the Examiner says it discloses. In short, the Office Action concedes that Telkes does not disclose a composite of highly thermally conductive fibers where the fibers have "portions extending from said matrix into said cavity", and the Office Action fails to identify any specific teaching in Knoell of fibers that have "portions extending from said matrix into said cavity". Telkes and Knoell cannot together teach a feature which does not appear in either of them. Accordingly, it is respectfully submitted that the combined teachings of Telkes and Knoell do not render

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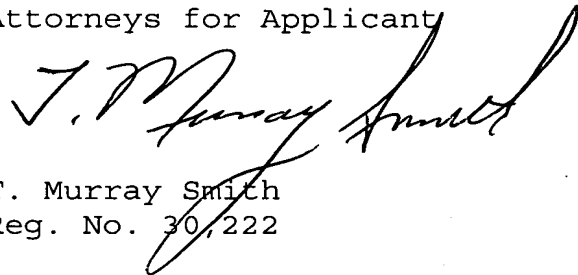
obvious the subject matter of Claim 28. Claim 28 is therefore believed to be allowable, and notice to that effect is respectfully requested.

Conclusion

Based on the foregoing, it respectfully submitted that all of the pending claims are fully allowable, and favorable reconsideration of this application is therefore respectfully requested. If the Examiner believes that examination of the present application may be advanced in any way by a telephone conference, the Examiner is invited to telephone the undersigned attorney at (214) 953-6684.

Although Applicants believe that no additional fees are due, the Commissioner is hereby authorized to charge any fees required by this paper, or to credit any overpayment, to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,  
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